



NORTH DAKOTA MEDICINE

University of North Dakota School of Medicine & Health Sciences



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NORTH DAKOTA MEDICINE

University of North Dakota School of Medicine & Health Sciences

UNIVERSITY OF NORTH DAKOTA
SCHOOL OF MEDICINE AND HEALTH SCIENCES

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ON THE COVER Students in the SMHS Medical Laboratory Science program examine a bacterial culture in the School's Dr. Robert and Charlene Kyle Medical Laboratory.

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INCLUSION AND EQUITY

Across the country, one of the resonant themes in organizations of all sorts this year has been the importance of addressing equity and inclusion in the workplace. This is true even for our nation's health care enterprise—whether in the hospital, clinic, school, or elsewhere in the community. The UND SMHS takes this issue seriously, and has worked hard to ensure that our School is a welcome place for all, especially in this time of heightened concern over bias (both explicit and implicit) and inappropriate behavior. The 2018 annual meeting of the Association of American Medical Colleges (AAMC) focused on the importance of inclusion and equity in our medical schools (the AAMC is an organization that works with and represents all 151 medical schools in the U.S. and the 17 in Canada). Three of the five plenary addresses at the meeting directly confronted the issue of bias and discrimination. Of particular concern was the plight of women and underrepresented minorities (URMs) in the health care sphere. For example, it is striking that the number of African American male medical students is no greater today than it was nearly 40 years ago, despite a significant increase in the overall number of medical students in the U.S.

One plenary speaker—Professor Anita Hill of Brandeis University, noteworthy because of her testimony prior to the confirmation of Supreme Court Justice Clarence Thomas—chastised the medical community for allowing a significant disparity in income when comparing men and women in

the health care delivery and health educational workplace. But while Professor Hill is correct that we really need to be sensitive to gender and racial inequities, I think that she confused pay equity with pay *parity*. She compared how much men and women who work in this field earn and found that women earn about 30 percent less than men. But she didn't adjust her numbers to compare men and women who do the same job and have similar job performance assessments. For example, women are more likely to go into pediatrics than men, but male physicians are more likely to go into interventional cardiology or orthopedic surgery than are female physicians. And while there may be other factors involved in those career choices, including possible bias, market forces have determined that interventional cardiology and orthopedic surgery are better remunerated than pediatrics. So it should be no surprise that women physicians as a group earn less than their male counterparts who work in health care (that is, there is no pay parity). The key question is whether women earn less than men when they are doing the same job (pay equity). Suffice it to say that pay equity is a non-negotiable concept—equal pay for equal effort and outcomes is a core North Dakota value.

At a subsequent panel discussion, we started to get closer to what actually is going on with pay for faculty members who teach and do research in our medical schools. Three panelists from medical schools presented the results of rigorous analyses that each performed to assess whether



women and URMs are at a pay disadvantage. The analyses tried to compare the pay of men and women (and URMs) when they performed the same type of job and had similar levels of success as measured by a variety of metrics. What they found was both good and bad news. It turns out that the difference in pay was quite modest—on the order of a few percentage points overall. But there appeared to be a small but persistent pay differential still, with the disadvantage being borne by women.

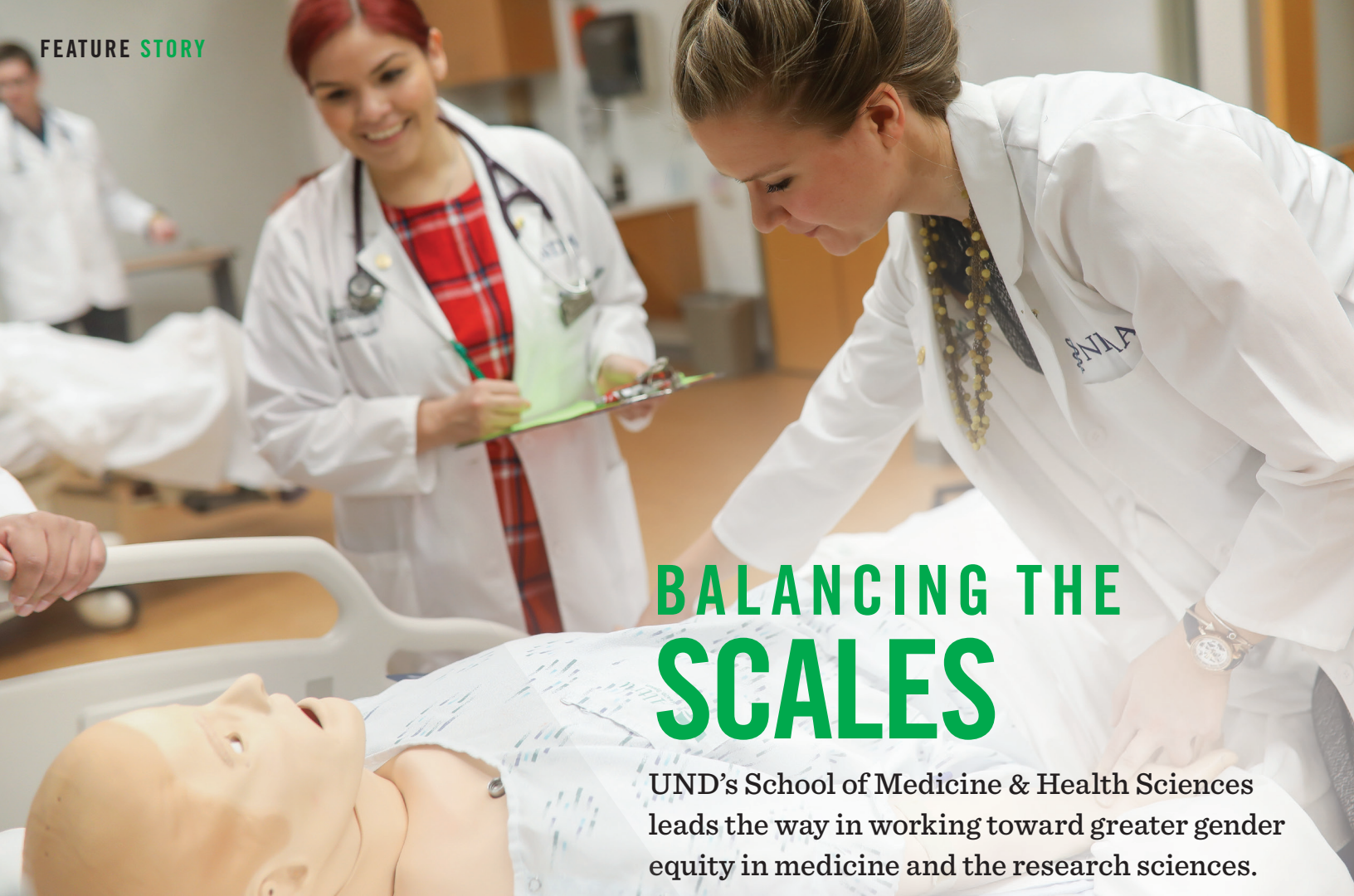
Here at the UND SMHS, we have compared the pay of men and women in the medical curriculum for years, and repeat the analysis yearly. While we don't employ as rigorous an analysis as the schools represented on the panel, I am pleased to say that we have found no persistent or systematic evidence of difference. On the other hand, we have, over the years, encountered a few situations where there are apparent inequities, including one that came to my attention recently. In all cases, we have corrected any apparent inequity immediately—and we continue to monitor to be sure no inequities develop.

I'm also proud of the climate of inclusiveness at the UND SMHS. On my senior leadership team (constituting the School's Executive Committee), three of the seven positions are filled by women. Of our full-time departmental chairs, four of 10 are women. On the other hand, we clearly have work to do with our part-time clinical department chairs, all of whom are male. To help us keep the momentum going in this regard, we recently named the Director of our Indians Into Medicine (INMED) Program and Chair of our Master of Public Health Program, Don Warne, MD, MPH, as the School's associate dean for diversity, equity, and inclusion. Dr. Warne has already been impactful in this role, helping us understand better the value of diversity, equity, and inclusion in our organization.

On that note, I'm very proud of the School's success in advancing American Indian students and leaders. Our highly regarded INMED program has been successful in recruiting, supporting, and guiding a generation of students, many of whom come from very challenging educational and personal backgrounds. And we are an exemplar in the country for recruiting American Indian physicians for senior leadership positions. No other school in the U.S. can boast two American Indian members of their senior leadership team, as we can. In fact, both of them (Drs. Warne and Joy Dorscher) were invited to present at the recent AAMC annual meeting and did an excellent job of representing our School.

Read on to learn more about how the UND School of Medicine & Health Sciences is addressing the often complex questions of diversity and equity—and contributing to North Dakota's increasingly diverse healthcare workforce every day.

Joshua Wynne, MD, MBA, MPH
UND Vice President for Health Affairs and Dean



BALANCING THE SCALES

UND's School of Medicine & Health Sciences leads the way in working toward greater gender equity in medicine and the research sciences.

"My dad went to med school when I was five, so I watched him going through that process," said Sarah Lewis, a second-year medical student at the UND School of Medicine & Health Sciences (SMHS), describing how she was encouraged to explore medicine herself from an early age. "That's what pushed me toward science. But even before that I was interested in the idea of being a doctor."

Melissa Johnson nodded in understanding.

"No one discouraged me from science," added Johnson, a first-generation college student who used to obsess over television programs like William Shatner's *Rescue 911* and *Bill Nye the Science Guy*. "I've always been interested in medicine. I volunteered as an EMT in high school, went to college for a chemistry degree, and here I am."

And so the conversation went as Lewis, Johnson, and their second-year colleagues Becky Dravland and Andie Taborsky reflected on how times have changed for females pursuing careers in medicine and the biomedical sciences.

The four women were part of the first cohort of matriculating medical students in American history to be comprised of more females than males (when all 150+ schools recognized by the Association of American Medical Colleges are combined).

Hidden Figures

But while this group of women struggled to remember an instance where they were not encouraged to explore the sciences, it wasn't always so.

Medical doctor and research scientist Mary Ann Sens, the chair of UND's Department of Pathology and medical examiner for Grand Forks County, recalls a time when it felt like much of the world was hostile to the notion of women practicing either medicine or laboratory science.

"I was absolutely dissuaded from going into science and medicine by some people," explained Sens, who described classified ads in the South Carolina newspapers of her youth that specified "Help Wanted: Ladies" and "Help Wanted: Men."

Very rarely did job openings in the sciences or healthcare indicate they were looking for female applicants.

"When I went to medical school the [gender] split was 95 to five in favor of men," she continued, "It stayed that way for a long time. I heard several comments that I was taking a man's place in the field and so on. But I just persevered. I intended to



Mary Ann Sens, PhD

go into science early on. My parents were very supportive of education for women. They insisted that my siblings and I all go to college. I'm happy with the direction things have gone [with more females entering the sciences], but it hasn't been far enough."

Pipeline Problem?

Referencing her colleagues in UND's Department of Biomedical Sciences, Sens added that there are far more women pursuing graduate degrees in the biomedical sciences than a few decades ago.

Helping recruit and retain females into the research sciences are folks like Sens and Catherine Brissette, an associate professor of biomedical sciences at the SMHS who has built a career studying the pathology and diagnosis of Lyme disease and other vector-borne illnesses.

Noting how her own graduate school advisors were female, Brissette applauds the growth she has seen in young women pursuing science and medicine, but notes that there still aren't a lot of female professors at colleges and universities.

"In terms of the undergrads who come in I get plenty of interested young women," mused Brissette, who began at UND as a single mother with a 17-month old baby and was one of only a handful of women in a department of more than 40 faculty. "There is a point where many women fall out of the sciences, but it's not at the college level. A lot of it might simply boil down to the traditional questions of family and work-life balance. And that lack of [female] role models may cause young women to drop out of the pipeline. That's why it's so important for women in positions of power and prestige to 'send the elevator back down' and provide encouragement and mentoring to the next generation."

While such scenarios are in line with what is happening at many schools nationally, the SMHS seems to be performing better than average in this regard. Three of the seven members of Dean Joshua Wynne's senior management team and four out of 10 full-time departmental chairs are women.

"Not bad, I'd say, although all of our clinical departmental chairs are men," Dr. Wynne admitted. "Taken all together, six of 21 [29 percent] of our deans and chairs at the School are women—still not where I'd like it to be, but almost double the 17 percent national rate for medical schools. And of the 10 people who report directly to me, four are women."



Catherine Brissette, PhD

Building relationships

The School's attempt to achieve greater gender parity at the administrative level reflects the fact that not only are there more women pursuing medicine today, but that the American health care workforce as a whole—from athletic trainers, nurses, and physician assistants to therapists and technicians—is already predominantly female.

But despite the fact that things have gotten much easier for women interested in such careers, the environment can still pose challenges unique to female medical students.

Taborsky described her time working as a certified nurse assistant when she was younger. "I actually got a bit frustrated with some patients," Taborsky said. "People—often older men—would ask me, 'Are you going to nursing school?' and it frustrated me that they assumed that I was going to be a nurse just because I was a female."

For Dravland, whose father was also in medicine, it's that sort of lingering bias among persons of an older generation that compels many young women to work even harder.

"I think there is an unconscious pressure for females to push ourselves and improve ourselves when we know we still might be taken less seriously as professionals," she said.

"In general still we have to consider a lot more 'life' stuff as we make these decisions about specializing, residency, and fellowship," added Lewis. "By the time you've completed all of that you'll be considered 'advanced maternal age.' You have to take that into account."

Although gender still matters in an evolving healthcare workforce, says first-year medical student RaMae Norton, it is perhaps today less of an issue than is training. Bedside manner, communication, and relationship building are increasingly emphasized in medical schools for all students.

All of this is "not only about gender but *generation* and the changing doctor-patient relationship," Norton said. "In my experience, if physicians have an honest relationship with patients and take time with them, they're likely to have more open conversations, maybe better medication compliance and so on, regardless of gender. That relationship itself should be the focus."

By Brian James Schill

“DIN HELSE!”*

UND Master of Public Health students get a different point of view on health systems through Norway exchange.

* Norwegian for “[To] your health.”

Standing at the tip of Trolltunga—“Troll’s tongue”—nearly a mile above Lake Ringedalsvatnet, Abby Bachman resists the urge to pinch herself.

“The edge of the precipice was incredible,” Bachman said. “I have never seen anything like it before. We were above the clouds, which was an amazing experience. My parents saw the picture and were blown away, but at the same time they weren’t surprised. I’ve always sought out adventure.”

A UND Master of Public Health Program student who spent her fall 2017 semester at the University of Bergen in Norway, Bachman not only hiked some of the most scenic and untrammeled terrain in the world; she had the good fortune of also learning about the American health system by comparing it with health systems abroad—sometimes by experiencing them first-hand.

“I ended up breaking a finger during one of my volleyball practices,” said the second-year graduate student studying population health analytics at UND.

Although she got the finger splinted, Bachman lamented the amount of time she had to wait for an X-ray in the Norwegian emergency room and the quality of care she received. When the finger continued to swell, she ended up visiting an emergency room in Germany on a weekend excursion for a follow-up X-ray that she could take back to the States (which Norway wouldn’t allow her to do).

“The service was much quicker in Germany,” she noted.

Calling Norway “one of the most beautiful places I’ve been to,” Bachman’s MPH Program colleague and fellow hiker Natalie Scherr agreed: despite their flaws, health systems like those in Norway and Germany—which achieved universal coverage for their citizens in different ways in the last century—have these Americans thinking differently about their homelands’ systems.

“I’ve definitely noticed and been told about the perks of the Norwegian health system,” said Scherr, who spent the fall

2018 semester in Norway. “The fact that having health insurance is just a given here is pretty cool. I think the system does have some downfalls but, overall, it has me wondering why America doesn’t do the same.”

Different systems, different outcomes

After all, even slight differences between health systems can affect populations in major ways.

Compared to the United States, Norway boasts lower costs and often better outcomes, including higher life expectancy, lower infant mortality, and less chronic disease overall.

This is why the World Health Organization, in its controversial World Health Report 2000, “Health Systems: Improving Performance,” listed Norway’s health system as eleventh best in the world in terms of outcomes, access, fairness, and cost efficiency. The United States infamously came in at 37 overall—above places like Slovenia and Cuba, but below most every other industrialized democracy in the world.

But such reports should be interpreted with caution, advised Arielle Seyla, PhD, assistant professor in UND’s Department of Population Health and coordinator of the MPH Program’s Norway exchange.

“Yes, Norway’s healthcare system shows success on objective outcomes, but there are also important pre-existing differences in things like population and lifestyle behaviors between countries that confound the relationship between systems and outcomes,” she said. “I can almost guarantee that most estimates of the healthcare systems’ impact are statistically overestimated.”

Despite such differences, or maybe because of them, faculty in the Master of Public Health Program at the UND School of



Arielle Seyla, PhD

NORGE LIV

MPH students Ruby Olerud (rainbow toque) and Natalie Scherr (black/white headband) take a break from studying with Dutch student Giulietta Quast (pink hat) outside of Bergen.



Medicine & Health Sciences thought Norway would make for a great point of comparison for American students wanting to study public health systems and global health outcomes abroad.

“Bergen has an internationally-recognized graduate program in system dynamics modeling, and already partners with UND’s College of Engineering & Mines,” continued Selya, noting how system dynamics helps students and scholars understand health policy in new ways. “There are only a couple dozen public health researchers in the U.S. who are proficient in system dynamics, meaning MPH students of ours who study in Bergen will be highly marketable when they graduate.”

System dynamics is an analytical approach to understanding the complex behavior of often nonlinear systems over time. In the context of public health, system dynamics might involve the development of computer simulation models that portray processes of accumulation and feedback in an effort to develop better prevention or treatment protocols for infectious diseases such as tuberculosis or public health campaigns for smoking cessation.

According to Selya, the grant-funded program, which has sent three UND students to Bergen to date to study system dynamics, began in January 2017 and runs through December 2020. One University of Bergen student has come to North Dakota to study.

“The hope is that MPH students training in Bergen will return to UND and use system dynamics in their MPH activities,” Selya said. “This is the first and only formal graduate-level international student exchange program at UND.”

Cultural Immersion

Although Bachman and Scherr spoke highly of their system dynamics training, equally important to their intellectual and personal growth has been the experience of living abroad.

“I have never studied abroad before so this experience has definitely made me grow as an individual,” Scherr added. “I’ve learned a lot about myself and the subtle differences between cultures.”

Having also spent the fall 2018 semester in Bergen, Ruby Olerud agreed, explaining how simply being forced to try to make her way in a foreign country has helped her become a more patient and sophisticated problem solver.

“It has been an interesting living and learning environment, being surrounded primarily with students from countries other than Norway and the U.S.,” said Olerud, who is also focusing on population health analytics at UND. “It’s great to have had a chance to live somewhere besides the U.S. America tends to live in its own little secluded bubble, but in Europe travel among the countries is much more common. Living in a place in which the native language is not English has definitely been an eye-opener and I think has humbled me.”

Such feelings go in both directions, it seems.

“The University of Bergen student who came here this past spring worked with Ian Watson, a representative from Altru Health System who is also affiliated with our MPH Program,” Selya said. “She developed a model to help the day-to-day workflow and operations in one particular department, and they found her model very helpful. She has since successfully defended her master’s thesis and presented her work at the International System Dynamics conference. So this exchange has been mutually beneficial to both sides.”

By Brian James Schill

Photos courtesy Abby Bachman and Ruby Olerud.

EXPLORING

DaCCoTA TERRITORY



Dakota Cancer Collaborative on Translational Activity brings researchers and providers together to tackle cancer in the Dakotas.

that in the end amounts to more the \$20 million for cancer research—was on its way.

Fighting Cancer

According to Basson, even if institutions like UND are producing good biomedical research, it can be challenging for researchers to get their work over the abyss that separates research laboratories from hospitals and clinics. DaCCoTA hopes to bridge that gap by bringing clinicians and nonclinicians together to develop novel treatments for cancer cooperatively and, ultimately, get those treatments to patients sooner and more effectively.

“Our team’s goal is to develop a highly productive, collaborative and sustainable translational research center that will focus on the cancers that most commonly and disproportionately afflict the citizens of our region, especially American Indians,” Basson said, noting not only that cancer is the leading cause of death for people ages 35-64 in North and South Dakota, but that the incidence of certain cancers is nearly double for American Indians, relative to the rest of the population.

Such statistics prompted Basson and his colleagues from North Dakota State University, the University of South Dakota, and health providers in both states to envision a multi-state, multi-institution team dedicated to understanding better cancer and its causes, and to develop more effective treatments.

“The NDSU College of Health Professions is excited to be a part of DaCCoTA with our friends from UND and USD,” added Charles Peterson, dean of the College of Health Professions at NDSU. “By combining the strengths of our regional research universities, we will be able to accomplish so much more than what we could do individually. This grant will provide us with an opportunity to significantly advance the research missions of our universities, leading to positive economic and health outcomes for our state and region.”

Dr. Marc Basson checked his email again.

And again.

As principal investigator (PI) on a team of researchers representing several institutions in the Dakotas that had submitted a bold grant proposal to the National Institutes of Health (NIH), news of any award—positive or negative—would be coming to Basson.

He had been waiting for over a year.

Then, one afternoon late in August 2018 an email bearing the NIH stamp and a rather nondescript title appeared in his inbox: “1 U54 GM128729-01 PI Name: Basson, Marc D.”

Holding his breath, Basson, senior associate dean for Medicine and Research at the UND School of Medicine & Health Sciences (SMHS), opened the note and read the message’s first line: “The National Institutes of Health hereby awards a grant in the amount of \$4,300,000...to UNIVERSITY OF NORTH DAKOTA in support of the above referenced project.”

And with that, the Dakota Cancer Collaborative on Translational Activity (DaCCoTA) project—a five-year project



“The DaCCoTA team isn’t proposing to do specific research ourselves. Instead, we’re seeking to grow and facilitate the research of others at UND and across the Dakotas.”

MARC D. BASSON
MD, PhD, MBA, FACS

The longitudinal project will introduce into the Dakotas several new research “cores”—collections of resources such as equipment, physical spaces, and even personnel—that researchers from around the region can utilize.

“These are resources that this grant makes available to investigators around the region,” said Basson. “The DaCCoTA team isn’t proposing to do specific research ourselves. Instead, we’re seeking to grow and facilitate the research of others at UND and across the Dakotas.”

“We are extremely proud with how Dr. Basson has brought together the leading educational and health care delivery organizations in the region, along with their outstanding researchers and providers, to form a consortium that will reduce cancer risk through improved therapies,” noted Joshua Wynne, vice president for Health Affairs at UND and dean of the SMHS. “Cancer is rapidly overtaking heart disease and stroke as the leading cause of death in the U.S., and this collaborative effort will help to stem that unfortunate trend.”

Culture shift

According to Basson, now that the project has been given a green light, part of DaCCoTA’s goal is to shift the culture of both research institutions and health systems, to get them to talk to each other more often.

We do a good job of coordinating with providers when it comes to educating our medical or health sciences students,” Basson said. “But that has been less true, historically speaking, of our research enterprise.”

To shift the culture of both research and health institutions, and better coordinate their efforts, the SMHS in 2016 began offering a course requiring graduate students in the biomedical sciences to shadow local health care providers for 16 hours. The shadowing shows students in real time the health conditions they are studying—and those conditions’ effects on real people.

The course has been very popular, said Basson.

“It’s easy for some students to live in the lab and read about disease in a textbook, but that’s not the same as seeing somebody with this or that illness,” he said. “It’s that environment and culture that we’re trying to build upon with DaCCoTA. We’re trying to build these teams that will continue to collaborate even after the grant period expires.”

And with DaCCoTA, this regional network of researchers and providers will itself be able to award grants to as many as 20 smaller projects annually to teams of researchers studying cancer.

“We’ll be sponsoring ‘we’ projects rather than ‘I’ projects,” Basson said. “Just as [UND] could never do this ourselves, we think a broad team approach is best here and believe that the sum is greater than its parts. DaCCoTA will build bridges and train scientists and clinicians throughout the region to apply our basic science knowledge about cancer to achieve real clinical impact, paving the way to develop unique ways to combat cancer in the Dakotas.”

In the end, then, despite the fact that from start to finish it took Basson and his team two full years to secure the NIH funding, the wait was well worth it.

“I can stop checking my email obsessively now,” Basson laughed. “Of course, now that the project is moving forward I expect my inbox is going to be as full as it ever was. But that’s a good thing.”

by Brian James Schill and Jan Orvik

MAKING MORE SENIOR MOMENTS

The UND School of Medicine & Health Sciences kicks off North Dakota's first medical fellowship program in geriatrics.

Edith Wong remembers where she was when the idea of pursuing geriatrics—the branch of medicine that specializes in the health and care of elderly persons—first came to her.

“I was doing one of my first rotations in medical school and was paired up with a general practitioner in Ireland doing geriatrics,” says Wong over the phone from Fargo, N.D., of her medical training at Ireland's University College Dublin. “I saw he was able to serve this very vulnerable population extremely well and take care of their needs. The reason he was able to do so was because he had a good staff and was able to organize support for patients. That's something I really wanted to do.”

Of course, Wong adds, a fraught experience with her grandmother's health didn't hurt: “She was pretty sick recently and I realized how important geriatrics was for the health and wellbeing of older persons.”

So did Wong end up applying to the new Geriatric Medicine Fellowship offered through UND's School of Medicine & Health Sciences, a one-year post-residency training program that offers fellows geriatric experiences in the clinic, hospital, and nursing home settings even as they pursue clinical research and quality improvement projects.

Meeting a Need

Three months in, Wong and her co-fellow Haris Ali, who is also completing his fellowship in Fargo, express no regrets.

“It is going well,” says Ali, a native of Pakistan who completed a residency in internal medicine through UND. “I enjoy



Edith Wong, MD



Syed Haris Ali, MD

interacting with the elderly. The atmosphere in the clinic, nursing home, and elsewhere is relaxed and conducive to learning. Our facilitators are accessible and helpful.”

The need for such young fellows is, of course, great. It is well-known that as America's Baby Boom generation reaches not only retirement age but “elderly” status, the need for physicians dedicated to caring for senior citizens will only increase.

This fact is especially true in North Dakota, which, despite ranking first in the U.S. for Alzheimer's disease incidence and claiming one of the highest “oldest-old” populations in the country, according to the Centers for Disease Control and Prevention, can name only nine board certified geriatricians still in practice.

“According to the American Geriatrics Society, North Dakota is short 40 formally trained geriatricians,” explains Donald Jurivich, chair of the SMHS Department of Geriatrics and the driving force behind the fellowship. “The geriatrician shortage is a global phenomenon, though. In the U.S., over half of geriatric training programs go unfilled.”

The reasons for this chronic shortage are many and complex, continues Dr. Jurivich. Whereas some young physicians are reluctant to enter primary care, to which geriatrics is connected, others are dissuaded by the lack of geriatric training they receive during both medical school and residency, especially as it pertains to rural and medically underserved populations. And some simply think—often rightly—that specializing in geriatrics will make it harder for them to pay off medical school debt quickly, relative to other specializations that tend to be more lucrative. For even as health care evolves a vast majority of elderly patients are still insured via the federal Medicare system, which reimburses providers at a lower level than most private insurers for office visits and hospital procedures.

Even so, says Dr. Jurivich, one recent survey of physicians found that geriatricians are among the happiest and most fulfilled health care providers across professions.



“The geriatrician shortage is a global phenomenon, though. In the U.S., over half of geriatric training programs go unfilled.”

////// DONALD JURIVICH
DO

“And new research suggests that we can not only measure biological age but prevent and possibly reverse the aging processes,” Jurivich notes, describing how geriatrics leads the way in studies of nutrition, exercise, and interventions such as senolytics—understanding and influencing the senescence (or deterioration) of cells and tissues. “All of these emerging tools of healthy longevity will be guided by geriatricians.”

So it is, says Dr. Jurivich, that the field of geriatrics is much more exciting than the typical student or health consumer imagines it to be—and it’s just beginning to find its voice.

Fellowship Specs

UND’s Geriatric Medicine Fellowship includes slots in Fargo and Bismarck. The program was initiated in 2017 by Guy Tangedahl, MD, a UND clinical professor emeritus in Bismarck, and Jurivich in Fargo. Its incorporation was funded by the North Dakota State Legislature through the North Dakota Health Workforce Initiative, and it has the distinction of being the first ever advanced medical training program in state history.

Wong and Ali are the second and third fellows, respectively, to participate in the program; Karin Willis, MD, completed the fellowship in Bismarck in 2018. The fellowship programs are accredited by the Accreditation Council for Graduate Medical Education with the Fargo program also being given a Meritorious Citation.

Fellows interact with geropsychiatry, neurology, surgery, and rehabilitative medicine and help teach family medicine and internal medicine residents, as well as medical and pharmacy students. Included in their curriculum is training dedicated to improving older adult safety through fall-risk screening programs, an influenza vaccine “blitz” in Fargo, and specialty clinics for comprehensive geriatric assessment, fall prevention, and memory disorders.

The program includes four core faculty—Dr. Jurivich; Lindsey Dahl, MD, assistant professor of Geriatrics at UND; Darin Lang, MD, associate professor of Geriatrics at UND and co-

chair of Sanford Health Internal Medicine; and Jane Winston, MD, assistant professor of Geriatrics at UND and certified medical director of the American Board of Post-Acute and Long-Term Medicine.

Exploring Both Sides

Managing the fellowship and assisting fellows with their research projects is Gunjan Manocha, assistant professor of Biomedical Sciences at UND who came to the School of Medicine & Health Sciences for the express purpose of studying Alzheimer’s disease.

“Alzheimer’s is the most common form of dementia and it affects a person’s ability to carry out daily tasks,” adds Manocha, who works to help fellows and other medical students understand Alzheimer’s and other diseases of old age from the laboratory perspective. “North Dakota has the highest percentage of persons with Alzheimer’s in the nation. For me, the impact that the disease has on caregivers is what drives me to continue to work in understanding the disease and help come up with a cure.”

Back in the clinical setting, Wong pauses when asked what she might say to medical students to encourage them to pursue geriatrics either as a physician or researcher.

“Dealing with geriatrics engages a lot of specialties,” she says after a moment of reflection. “It acts as a bridge between primary care and specialty care. In geriatrics you’re able to explore both of these sides of health care, which I find enjoyable. I’m able to become an expert in a field, but don’t have to give up being able to take care of the entire person in a holistic way—that makes me really excited.”

By Brian James Schill



“I remember the relationship my family all formed with the provider, and I thought it must be really special to have that with your patients.”

////// LARISSA HAUG
PA-C

////// RURAL RELATIONSHIPS

Physician Assistant fulfills her passion in Cooperstown, N.D.

It's an age-old question for rural healthcare facilities across the state and country: How do we attract new, young health professionals to our rural town?

One rural community in North Dakota has cracked the case by hiring a newly graduated physician assistant (PA).

Cooperstown Medical Center

Cooperstown, N.D., is located in the east-central part of the state, 84 miles from Grand Forks, 65 miles from Jamestown, and 90 miles from Fargo. The town is home to Cooperstown Medical Center (CMC)—a clinic, hospital, and nursing home all under one roof. In this rural community, local access to healthcare is vital for patients, who would otherwise have a daunting travel schedule to receive even the most basic care.

Larissa Haug is CMC's newest PA, as well as the town's newest resident. After completing UND's PA program in June 2018, Haug began working at CMC in July, just weeks after graduation. She and her husband made the decision to move to Cooperstown rather than to commute from a larger town.

“I thought it was really important for us to live in Cooperstown,” Haug said. “They have had some turnover in recent years, and patients needed to see a provider willing to commit and live in town. This was part of the discussion during my recruitment phase, and I am glad we did it.”

Hailing from Neche, N.D., Haug has always had an interest in rural medicine. Although her hometown did not have a clinic, the nearest hospital in Cavalier, N.D., made a huge impact on her growing up. Specifically, Haug remembers the positive impression that the local team of rural providers and caregivers in Cavalier made while both of her grandparents received extended inpatient medical care.

“I remember the relationship my family all formed with the provider, and I thought it must be really special to have that with your patients,” Haug said.

This facet of rural practice has certainly carried through to this day. Although Haug has been practicing for less than a year, she points to the relationships she has developed with her patients as the highlight of her time in Cooperstown so far.

“In rural practice, I feel that the relationships with patients are so much stronger,” she said. “I feel very appreciated by my patients, and it's a huge honor to be trusted with their care.”

Discovering Cooperstown

Haug did most of her clinical training at Pembina County Memorial Hospital and CliniCare in Cavalier, a hospital and a team of providers she has been familiar with since she was a child. However, because the hospital and clinic in Cavalier didn't have a job opening for her, Haug's job search expanded to other rural areas of the state. She heard about a position in Cooperstown from a Physician Assistant Studies program classmate. The classmate's father, Dr. Jon Berg, is the medical director in Cooperstown. With nearly 40 years of practice experience, Dr. Berg visits Cooperstown weekly and serves as Haug's supervising physician and mentor.

“Being a provider is much different than being a student,” Haug said. “It was terrifying to start, and I am continually double, triple, and quadruple checking myself to be sure I am doing everything right.”

Having support and using available resources has helped Haug's transition. She added that Dr. Berg has been a Godsend.



“In a rural practice, you’re often the only provider, and you have to be resourceful to get patients the care they need,” Haug said. “At first, I was worried about the opinions of others, and that if I needed to call anyone to ask a question, it would seem silly. You get over that quickly when you realize it’s more important to provide the right care than to worry about sounding silly.”

In addition to Dr. Berg’s help, Haug relies on the nurse practitioner and director of nursing, as well as using phone consult capabilities with larger health systems in the state. She added that Avera E-Emergency, based out of Sioux Falls, S.D., is a service she uses almost every time she is in the emergency room.

“It’s a service CMC pays for whether we use it or not, so I use it for checks and balances, as well as help and advice when I need it,” Haug said.

Recruitment AND Retention

The Center for Rural Health at the UND School of Medicine & Health Sciences and the North Dakota Primary Care Office concentrate not only on the recruitment of providers to rural communities, but also retention for years to come. These offices are responsible for managing and/or promoting the several loan repayment programs offered to health care providers through the State of North Dakota. Haug is in the

midst of applying to one such program, which will provide her monetary compensation to help pay off outstanding educational loans. Her particular program offers medical providers financial support in exchange for two initial years of service in an underserved area of the state, with the option to renew the loan repayment agreement for additional years of service.

Furthermore, Haug and her husband have already taken the big step of purchasing a home in Cooperstown, a good indicator of long-term retention.

“I feel like North Dakota has a great focus on rural communities and helps them keep the health care services that already exist,” Haug said.

As for her practice, Haug looks forward to building strong relationships with her patients and admires her colleagues who have established community roots already.

“I sometimes wish I had grown up here so I would know the background of my patients and their family members like I did in my clinical experience,” Haug said. “But that will come with time. I know I’ll get there.”

By Stacy Kusler

NEW ROLE, NEW SCRIPT

Kay Miller Temple, M.D., moves from clinical practice to medical journalism for the Rural Health Information Hub.



A DIFFERENT TYPE OF PRESCRIPTION

Kay Miller Temple, MD, at her desk in the UND Center for Rural Health

Kay Miller Temple is not your typical web writer for the Center for Rural Health (CRH) at the University of North Dakota School of Medicine & Health Sciences (UND SMHS). Like her colleagues, Miller Temple writes and edits web-based articles for the Rural Health Information Hub (RHlhub) and for the Rural Community Health Gateway project. But the journey she took to becoming a rural health journalist is very different than the path taken by the other health writers at the CRH.

After more than 30 years as a practicing physician, Miller Temple decided to pursue a degree in journalism. Why would someone trade a stethoscope for a pen? Miller Temple says it

wasn't an impulse decision. She sought out career coaching to make sure she had a reasonable perspective on such a dramatic change.

"No one could escape the very obvious fact that I was a non-traditional student," Miller Temple said. "I recognized that if I wanted to write for the public, I had to have credibility."

Miller Temple grew up on a farm near Cresbard, S.D., population 103. Like others in her family, Miller Temple loved to read. She also enjoyed the vastness and the freedom of growing up in a rural area. On the family farm, she learned the value of hard work. She was responsible for the family

“Arizona State University had the Cronkite journalism school with a medical student master’s path, so the concept of a physician journalism student wasn’t too much of a stretch.”

////// KAY MILLER TEMPLE
MD

garden and also helped around the farm by driving truck during harvest and helping put up hay.

“My brother still farms the original homestead ground,” she said. “I go back a lot. It’s my favorite place.”

Miller Temple studied biology at Augustana College in Sioux Falls, S.D. After graduation, she was accepted into the University of South Dakota School of Medicine where she studied with the hope of becoming a family physician in a rural area. While doing her medical school rotations, she realized she wasn’t very fond of delivering babies or doing minor surgical procedures. Fortunately, there was a new specialty program at the Veterans Affairs (VA) Medical Center and the Maricopa Medical Center in Arizona that combined internal medicine and pediatrics. It seemed to be a perfect fit for her.

“It was great to have been their first resident, in one of the first med-peds residencies in the country,” Miller Temple said. “I had terrific training.”

Miller Temple worked as an internist with Mayo’s Arizona campus. It was supposed to be a one-year commitment, but she ended up staying for 15 years. She said being a member of the Mayo organization’s care delivery team was a memorable experience. She later became the chair of the utilization management (UM) committee, where she studied rules and regulations and translated them to her colleagues and other healthcare professionals. As the UM chair, she often wrote about healthcare instead of doing healthcare. She said she enjoyed the position, especially the writing, teaching, and speaking involved with that type of work, but she knew that eventually she would have to rotate out of that role. As she

contemplated the transition to the next chapter in her life, she decided to combine her background in medicine and her love of writing into a hybrid career.

“Arizona State University had the Cronkite journalism school with a medical student master’s path, so the concept of a physician journalism student wasn’t too much of a stretch,” Miller Temple said.

Miller Temple said her husband and her medical colleagues were supportive of her aspiration to become a journalist, but her family was uncertain as to why she would want to become a writer. They have since become fans.

“They like to read and share what I write now,” Miller Temple said. “And they realize that I’m still a doctor, just a doctor who happens to write.”

After Miller Temple finished her master’s program, a job at the RHlhub and CRH at the UND SMHS in Grand Forks caught her eye. She felt her journalism skills and her experience as a physician in a rural setting made her an “insider” for the position. RHlhub Director Kristine Sande also knew Miller Temple’s credentials made her a good, if unusual, fit at the CRH.

“I was shocked to see the M.D. behind Kay’s name on her application,” Sande said. “Honestly, her CV [curriculum vitae] seemed too good to be true.”

Sande says Miller Temple is a great addition to the RHlhub team because of her clinical experience and knowledge.

“Our whole team benefits daily by being able to pick the brain of someone with so much real-world expertise,” Sande said.

Miller Temple said it’s been about a year since her last shift as a healthcare provider, and although she doesn’t miss the day-to-day routine of formal care, she does see some parallels with her current work.

“Primary care is whole person care, care that centers in asking lots of questions and explaining lots of answers,” Miller Temple said. “As a rural health writer, I’m still asking questions and still explaining answers. I’m just not sitting physically with patients and families.”

By Marv Leier

AMERICA'S NEXT DRUG CRISIS?

As opioids continue to plague rural areas, North Dakota's health providers look for alternatives to a class of drugs called benzodiazepines, which also can be habit-forming and life-threatening.

Telling the story of an overstressed housewife in the 1960s, who although "she's not really ill" goes "running for the shelter" of her "little yellow pill," the Rolling Stones' song "Mother's Little Helper" was not only an oblique expression of sympathy with a fledgling second wave feminist movement.

It was also a public service announcement.

Although interpretations of the song vary, many observers think it was a warning to listeners of all genders in the 1960s of the dangers of a class of pharmaceuticals called benzodiazepines, and diazepam (trade name Valium) in particular.

Also known as "benzos," benzodiazepines—which also include lorazepam (Ativan), clonazepam (Klonopin), and alprazolam (Xanax)—are a class of pharmaceuticals first developed in the 1950s that enhance the effect of the neurotransmitter gamma-aminobutyric acid (GABA) in the brain, resulting in sedation and feelings of calm for most users. This makes them helpful in the treatment of a variety of conditions from insomnia and muscle spasms to anxiety and depression.

Doctor please, some more of these

More than 50 years after the Stones' pop PSA, though, benzo use among both males and females has skyrocketed in the United States, drawing the attention of both public officials and health care providers.

One study suggests that between 1996 and 2013, the number of American adults filling a benzodiazepine prescription



increased 67 percent, from 8.1 million to 13.5 million. This increase led one major news outlet recently to put benzos at the center of the "next drug crisis" in America.

All melodrama aside, not even North Dakota has been immune to the spike in benzodiazepine use.

"We are seeing a lot more misuse of benzos," psychiatrist Melissa Henke, medical director of Bismarck's Heartview Foundation and clinical professor with the UND School of Medicine & Health Sciences, told *North Dakota Medicine*. "From a clinical standpoint, benzos are more of a concern than they have been."

As Henke put it, if patients who have been prescribed a benzo feel anxiety or panic coming on, they can take a single pill and feel almost immediate relief. But it is this unmatched effectiveness that can be problematic for many patients.

"Benzos were never meant to be chronic medications," Henke continued, describing how quickly physiological dependence can develop in even irregular users of the medications. "But what we have now is people with even moderate anxiety taking them. So, if I'm taking benzos on a routine basis and decide to stop, or run out of the drug, if I experience withdrawal I'm going to feel not just anxiety but an intense anxiety. That just continues the [physical] need that develops because I'll feel that I clearly have symptoms when off the medication. But the symptoms might not be anxiety—just the withdrawal from the drug in the first place."

And for some this withdrawal is potentially life-threatening.

“That would be my experience for sure,” shared Amy Werremeyer, a psychiatric pharmacist who trains pharmacy students in the NDSU College of Health Professions and practices at the Sanford Health pharmacy in Fargo.

Confirming the rumor that benzos can be harder to quit than heroin, Werremeyer explained that if a patient has been on a course of benzodiazepines for less than a month, they should be able to quit relatively easily. But if the patient is taking the prescription, or using the drug recreationally, for longer than four weeks, withdrawal symptoms—heightened anxiety, heart palpitations, panic, tremors—can become serious and might culminate in life-threatening seizures.

This is because, said Werremeyer, benzodiazepines are like the “brakes” in the brain.

“If you take benzodiazepines it’s like your brain is stepping on the brakes all the time,” she said. “But it compensates [for the increase in GABA] by increasing the production of glutamate, which is like the gas pedal. So, it’s then as if the gas pedal is stuck on for the patient. When the benzo is taken away, there’s a huge imbalance in glutamate and GABA—you’re stuck in the gas pedal mode. And that’s what has to reverse.”

The symptoms that are life-threatening—the seizures—are rare and result from high doses of the drug over long periods of time, Werremeyer said.

“But it’s easy for the person experiencing any symptoms to think ‘OK, well this [withdrawal] is justification for why I need to be on this medicine.’ So the patient needs to know that this feeling is a temporary and often expected effect of their body adapting to the presence of the medicine, and that those adaptations will reverse over time.”

If you take more of those, you will get an overdose

Withdrawal notwithstanding, Henke added that like alcohol, benzos disinhibit users and impair judgment such that “things we’d normally not do, we now do when we’re under the influence.”

As a result, for all their potential benefits benzos also increase the user’s risk of suicide. Furthermore, Henke said, as the number of benzodiazepine prescriptions rose, so did the number of benzo overdose deaths.

In a 2018 piece in the *New England Journal of Medicine* titled “Our Other Prescription Drug Problem,” a team of researchers document the near ten-fold increase in drug overdose deaths involving benzos from 1999 to 2015.

Likewise, reports from the North Dakota Department of Health show that drug overdose deaths, some of which involve benzos in one way or another, have been increasing generally in North

Dakota this decade and were up in 2017 relative to 2016.

That said, opioids are largely to blame here. But as the opioid crisis ramped up around the United States, health providers and first responders began seeing patients stacking opioids with benzos, increasing the likelihood of either accidental overdose or suicide in all users of the drugs.

“The concern with benzos is that the lethality increases when you use benzos with alcohol or opiates,” Henke continued. “In some parts of the country you find benzos in over half of the opioid overdose deaths.

Searching for safer alternatives

Although benzodiazepine use is up since the 1990s, it seems to have plateaued as physicians, pharmacists, and state health departments recognize the drugs’ potential problems—and prescribe them more judiciously in response.

This is good news for Henke and other providers who, in an effort to get benzo use under control, are helping educate their colleagues on the dangers of benzodiazepines and prioritizing the search for safer anxiolytics. The problem is: there just aren’t many alternatives.

“Gabapentin is one drug we always considered to be safer,” Henke said, “but just yesterday we had three people come into our residential treatment center who were abusing opioids and gabapentin. That was their combination. As we look for safer alternatives, we’ll see more gabapentin and risks associated with that medication as well, so it’s hard to know what to do.”

In the absence of such alternatives, providers will continue prescribing benzos. After all, the serious side-effects are rare and the drug has been called a life-saver by many patients.

“I don’t want anyone to think that benzodiazepines are poison or that they’re awful,” concluded Werremeyer, noting also that women are prescribed benzodiazepines twice as often as men. “They’re a useful and sometimes necessary option. But their role needs to be understood by everybody involved in their use—providers, pharmacists, patients, and their families.”



**Amy Werremeyer,
PharmD, BCPP**



Melissa Henke, MD

By Brian James Schill

TWO BIRDS ONE STONE

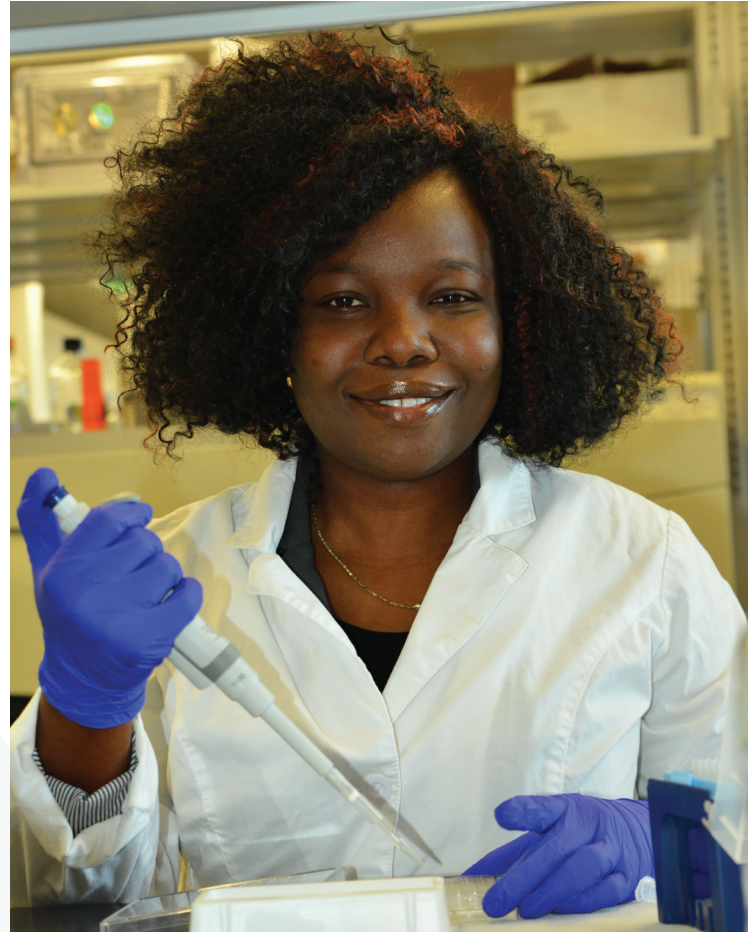
UND Department of Biomedical Sciences doctoral graduate Fredice Zangbede discusses the intersection between infectious disease and economic development.

When asked what it was that attracted her to studying helminths—the parasitic worms that can be found in over one billion people even today—Fredice Quenum Zangbede turns the question around:

“Why are there still so many endemic diseases in developing countries but not here in the U.S.?” asks Zangbede from her office in Fargo. “How come people are dying of infectious disease in Africa? We’ve done enough research to be able to answer that question, yet we cannot seem to fix the problem.”

While the more obvious answer to such a question involves the absence of access to things like clean drinking water, sanitation, and even basic vaccinations and other medicines, the scientist who earned a doctoral degree from the UND School of Medicine & Health Sciences in 2018 is thinking bigger—she’s thinking socioeconomics.

“We need to do more scientific research, of course, but more than that we need to get educated,” Zangbede says, referring to the poverty that in places like Africa and South Asia is responsible for most of the preventable deaths that each year



WORKING TO END ENDEMIC DISEASE

Fredice Quenum Zangbede, PhD, in the lab at the UND School of Medicine & Health Sciences

leave countless children without one or more parents. “We need to apply our knowledge to overcome these problems that we *know* how to fix.”

All of this Zangbede understands first-hand. A native of the small West African nation Benin, she says she has seen the health consequences of economic inequality up close, its effect on women and children in particular.

“I came from a less developed region in Africa and we didn’t have many opportunities to study,” she explains, remembering her childhood. “I always was asking questions—why is something the way it is? So my goal was to come to the U.S. to get my education and eventually go back home to help others, especially women in the poorer regions afflicted by preventable conditions like malaria, tuberculosis, or Ebola.”

Combatting Inflammation

Securing her visa, Zangbede made her way to the United States in 2005. After earning an undergraduate degree in microbiology from NDSU in Fargo, she applied to both public health and microbiology graduate programs across the

country. UND, she says, responded favorably to her application almost immediately. So off to UND she went, graduating with a PhD in Microbiology & Immunology (now known as the Department of Biomedical Sciences) in 2017, after many years of studying not only helminths but other invaders whose presence generates inflammation in the human body.

Zangbede became a professional researcher on the strength of her dissertation, a study of the anti-inflammatory effects of galectin-3-activated macrophages (white blood cells that literally eat invasive organisms) in the central nervous system (CNS) of helminth-infected mammals. A revised version of the dissertation was published in the *Journal of Neuroscience*—the leading journal in the field—in June 2018.

As the article explains, galectin-3 is a protein that plays an important role in cell-to-cell adhesion and macrophage activation. When an organism's immune system is functioning well, macrophages destroy invaders, perish themselves, and are cleared out of the body through a process called efferocytosis. But the immune systems of mice whose galectin-3 protein had been compromised struggle in this "clearing," leading to both short-term disease severity and ongoing neurological problems post-infection.

"What we noticed was that in the absence of galectin-3 on M2 macrophages there was more inflammation in the CNS as well as accumulation of the cerebrospinal fluid of mice with these parasites," Zangbede continues with excitement in her voice. "That means the M2 macrophage's apoptosis [cell death] clearance activity required galectin-3. They need it. In absence of these molecules you have *more* inflammation, which hurts the immune system's ability to do its job."

No one had demonstrated this connection in the lab before.

"The results from Fredice's and other studies to understand the M2 macrophage functions in the central nervous system microenvironment are expected to provide new approaches to manipulate macrophage function to suppress inflammation and promote nervous tissue restoration in a variety of inflammatory disorders," adds Bibhuti Mishra, assistant professor of Biomedical Sciences at the SMHS, and Zangbede's graduate advisor. "I admire Fredice and am proud of her, considering that she worked through several challenges to earn her PhD with distinction. Her success is exemplified by her achievements—five publications already under her belt."

Microbiology as Public Health

Although she has chosen to focus on the laboratory for now, Zangbede admits that she is still interested in public health as a practice, and how public health and economics inevitably overlap.

In what almost counts as stating the obvious, several research studies new and old have documented the association of poverty and infectious disease. As such, combatting infectious disease, Zangbede suggests, is as much about laboratory science as it is economic development.

"I want to use my knowledge to impact people's lives," she says. "I want to do concrete care for people that has an impact on public health—things like education on how to prevent infection and control of environment to stop the spread of infections."

Noting that she "always wanted to be a scientist," Zangbede says that her family was very supportive of her goal and offered her courage during times when she felt alone as the only woman in the laboratory.

"To tell you the truth, it was not easy for me—going into science. But I didn't ever think of quitting," she concludes. "If any woman asks me about my research or if they should go into science, I encourage them to go for it. We need more women in the field."

By Brian James Schill



RESTORING JUSTICE

UND Master of Public Health student Mandy Slag helps residents of a local prison give back through gardening.



VICTORY GARDEN

Timothy Klohe (left) and Chris Vernon at the North Dakota State Penitentiary in June 2018. (Photo by Tom Stromme, *The Bismarck Tribune*)

When Mandy Slag was accepted into the UND Master of Public Health (MPH) program, she had no reason to believe she would soon be growing produce alongside residents of the North Dakota State Penitentiary (NDSP) in Bismarck.

“I had no idea I’d be doing this,” laughed Slag, a second-year student of UND’s MPH program who is working her way through the program’s health management and policy track. “I seized the opportunity because I thought it’d be a unique project and was excited to help out with these two vulnerable populations—those at the penitentiary and those on the lower end of the socioeconomic scale.”



Mandy Slag

Victory Garden

With grant money provided by the Consensus Council and Bush Foundation, Slag, who has worked with the prison population before, used her summer practicum course (MPH 594) to cultivate a “Victory Garden” with the residents at the Bismarck facility.

During the First and Second World Wars, so-called Victory Gardens were planted in the United States and around the world in public parks and private plots to aid the war effort indirectly and boost citizen morale. The term has taken on a different meaning this century as Victory Gardens today are planted by individuals and organizations looking to advocate for organic foods, environmental sustainability, and healthier lifestyles generally.



Having seen such gardens introduced to the populations of state penitentiaries and correctional facilities elsewhere in the country, John Hagen, MD, staff physician at the North Dakota State Penitentiary and Slag's advisor, explained how the project literally came to fruition when by all rights it should have failed.

According to Hagen, the project grew out of an email sent around the UND community regarding a \$2,500 grant targeted toward projects involving sustainability. Although Slag jumped on the idea immediately, after sketching out a preliminary plan for the garden she learned that the grant was only to be used to encourage grant writers to research and write a grant—not to fund an actual project.

"That should have been the end of the story—project conceived, project proposed, project shot down," noted Hagen. "Instead, Mandy forged ahead and identified other potential funding sources. She did not quit and she did not let up. The rest, as they say, is history."

Giving back

Working with Hagen and other officials at the penitentiary, along with the nonprofits noted above, Slag moved forward on the garden project in May and June 2018. The goal, she said, was not only to transfer new skills to a marginalized group, but to help them give back to the community—and hopefully help them feel less isolated.

"It got residents outside and gave them a sense of pride because they're growing something real, and donating the food," said Slag, describing how the fruits of the residents' labor were given to a local homeless shelter. "And it's my understanding that this program has been written into the facility's budget to be continued next year."

"This appealed to me," penitentiary resident Chris Vernon told the Bismarck Tribune of the garden in June 2018. "I just hope that I get to do it again next year."

The project coalition included not only the UND MPH program and North Dakota Department of Corrections and Rehabilitations, but the state's Department of Agriculture, the USDA National Resource Conservation Service, and Ministry on the Margins.

To date, over 800 pounds of produce have been donated to Bismarck-Mandan organizations such as Ruth Meier's Hospitality House, Heaven's Helpers Soup Café, the Salvation Army, Emergency Food Pantry, and Welcome House.

So it is that the NDSP garden is "incorporating restorative justice by empowering residents and decreasing recidivism by creating vocational training and teachable resident opportunities," said Slag, referencing the Center for Justice and Reconciliation and Prison Fellowship International. "It focuses on bringing offenders and community members together to create positive outcomes."

In the end, Slag, who works on injury prevention for the North Dakota Department of Health, hopes to contribute to similar projects dedicated to vulnerable and underserved populations in the state.

"This is why I decided to get my master's degree in public health," she said. "To further myself and help the people of North Dakota lead healthier, safer lives."

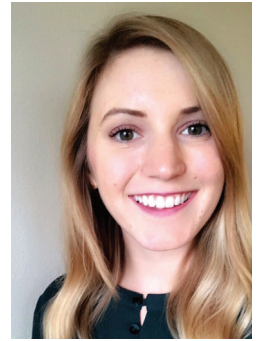
"This was a tremendous experience for us," concluded Hagen, calling the project a terrific example of restorative justice.

"Mandy is an exceptionally talented and motivated student who led by example."

By Brian James Schill

PT WITH A PURPOSE

Third-year Physical Therapy student Kelsey Bell talks with North Dakota Medicine about the value of versatility and empathy in PT.



Thanks for your time, Kelsey. Why'd you choose UND's Physical Therapy program?

I researched the physical therapy programs that were close to where I'm from, and UND stood out to me, especially after I toured the space. They had a nice tour of the department and the faculty were very welcoming. I liked that they had the early acceptance program for physical therapy. I could do my undergrad coursework at UND and transition to graduate school in the shortest amount of time possible. That was another bonus of choosing UND.

It sounds like you'd had your mind set on becoming a physical therapist for a while.

My younger brother has muscular dystrophy, so he has been seeing a PT my whole life. I'm three years older than him so I saw how impactful it could be for the person receiving physical therapy and their family. That's what got me into physical therapy. Then I was drawn in by the fact that it's so broad as a profession—you can do so many different things with PT.

How has physical therapy helped your brother?

His disease is a progressive weakness, but physical therapy has helped us adapt our home to help him keep as much function as possible as he gets older. It really helped us understand the whole process and gives him the best quality of life, which is awesome. My whole family has gone through physical therapy for one reason or another.

So, it makes sense they'd want a therapist in the family.

Yeah, I'm paying my dues I guess. [Laughs]

When I think of physical therapy I think of sports injuries. Does this make up most of what a PT does?

Much of it, yes. Sports are a big part of what we do! In physical therapy we like to say we're the movement experts. But whichever stage someone's at in life, we help them move so that they can get back to doing whatever they like to do, whether it's playing sports or performing daily activities. There are a bunch of different settings in physical therapy, like sports medicine, outpatient, and in-patient to help people across the lifespan.

A big buzzword around the medical profession these days is the word "empathy." What role does empathy play for you going forward as a practicing clinician?

I think empathy is a huge part of physical therapy. We are fortunate that we get to spend more time with patients than

some other medical professionals.

It's huge. If we're with them for an hour we can learn a lot about what motivates them, and because of that we can really center our care on what they need. We learn what they like and really get to know them, which helps the patient get invested in their own health and get back to where they want to be. Empathy helps us form that relationship with our patients.

You're in your third and final year in the PT program. What's been the biggest surprise and challenge so far?

I think the biggest surprise is how connected my classmates and the faculty are. It's like a big family here, which has been great. Students will use their different skills and leverage what they're passionate about to teach other peers. Sometimes it's a different technique or something that they've learned through experience. I don't think I ever thought about that before I went into the program—how much teaching other people and learning from your peers and professors rounds out your education and helps you apply it better. It's a lot of hard work, but I think having that good relationship with the professors and your peers helps you get through it in a way that keeps you engaged and excited. For me, the most challenging thing has been when something doesn't go the way you think it's going to—with a treatment session or if the patient has something come up out of the blue—and being able to adjust on your feet. I would say those skills have developed in me since the start of the program, being able to adjust quickly on the spot and putting together all the things I've learned.

What's the plan after you graduate?

Honestly, I'm not sure. At this point I'd love to work in either an outpatient or pediatric setting. It doesn't matter where geographically, I'm just excited to get out there and see what I'm most interested in during these last two clinical rotations.

Finally, any advice for students who may be considering UND's physical therapy program?

I'd tell them to get out and shadow a physical therapist to see what it's all about. This was something I enjoyed doing even before I applied and through my undergrad years. It kept me engaged and learning more as I was doing my undergrad work and got me more excited about the program and my future in PT.

Interview conducted and edited by Bilal Suleiman

■ '90s

David Gayton, MD '90, is now at Sanford State Street Clinic in Bismarck, N.D. The board certified physician has worked in the Bismarck community as an emergency medicine physician for the past 22 years and will now be providing walk-in care within the Sanford State Street Clinic.

Myra Quanrud, MD '90, has received a 5-Star Award in a survey conducted by Essentia Health and the Professional Research Consultants. PRC randomly surveys patients about their experiences in hospitals and clinics. Quanrud scored in the top 10 percent (at or above the 90th percentile) of the PRC national client database for percentage of patients who rate the overall quality of care by the clinic facility as "Excellent."

Michael Brown, MD '92, is now practicing cardiovascular surgery at Sanford Health in Bismarck, N.D.

Kent Diehl, MD '93, has joined the Jamestown Regional Medical Center Emergency Department. Diehl has more than 20 years of experience in Emergency Medicine, including about 15 in rural settings. Diehl also has extensive leadership experience, including serving as a lead physician and as medical director for a home health and hospice program.

Karen Brown, MD '93, has joined the Sanford Children's team in Bismarck, N.D. The North Dakota native has 18 years of experience as a neonatologist in the Bismarck community.

Brent Herbel, MD '94, has joined Sanford Health in Bismarck, N.D. The North Dakota native brings 18 years of experience as an interventional radiologist in North Dakota, including 14 years in Bismarck.

■ '00s

Mary Nybakken, MD '08, has joined Mid Dakota Clinic in Bismarck, N.D.

■ '10s

Michael Greenwood, MD '11, is the recipient of the 2018 Delhi Ophthalmological Society Award for Academic Excellence and Outstanding Contribution. Dr. Greenwood was invited to speak at the 69th Annual Conference of the Delhi Ophthalmological Society held April 6-8, 2018, in New Delhi, India.

Justin Mauch, MD '12, has joined the radiology team at Altru Health System in Grand Forks, N.D. He practices diagnostic imaging of the brain and spine to help diagnose conditions involving the neurological system.

Andrew Swenson, MD '12, is the newest emergency medicine physician at Sanford Emergency & Trauma Center in Bismarck, N.D.

Laura Knutson, MD '14, has joined Mid Dakota Clinic in Bismarck, N.D.

Steve English, MD '14, has joined the team of emergency department physicians at Jamestown Regional Medical Center in Jamestown, N.D. English has advanced emergency medicine training and experience at major trauma centers. In addition, English has almost two decades of military experience with the U.S. Army and North Dakota National Guard.

Daniel Field, MD '15, is now at Sanford Seventh & Thayer Clinic in Bismarck, N.D. An internal medicine physician, Field completed his internal medicine residency at Gundersen Health System in LaCrosse, Wis.

Amanda Blanchard, MD '15, recently joined Sanford Clinic in Bismarck. As an internal medicine physician, she will focus on complex health issues, uncovering diagnoses, and providing women's health, diabetes, hypertension, and preventive care.



David Gayton, MD



Michael Brown, MD



Karen Brown, MD



Brent Herbel, MD



Andrew Swenson, MD



Daniel Field, MD



Amanda Blanchard, MD

WELCOME JEFF DODSON!

New SMHS development director will prioritize student scholarships and endowed chairs/professorships.



GRAND SLAM

Jeff Dodson at a UND Alumni Association & Foundation event in 2018.

Jeff Dodson has been hired as the Director of Development for the University of North Dakota School of Medicine & Health Sciences with the UND Alumni Association and Foundation. Dodson takes the place of David Gregory, who retired earlier this year.

Dodson had been serving as the Director of Development for the College of Arts & Sciences for the past two years, where he secured record levels of funding from alumni and friends of the College. Dodson spent eight seasons prior to that appointment as the head coach of UND's baseball team.

"I'm looking forward to this new challenge," Dodson said. "Dave Gregory, and before him Dave Miedema, did incredible work for the School and its students. I want to carry on their tradition of excellence. This work is all about giving students the best experience possible."

Dodson earned a bachelor's degree in physical education from Livingston University in 1993 and a master's degree from Emporia State in 2002. He began his new duties at the School on October 1, 2018.

"I'm very excited to welcome Jeff to our School and have no doubt that he will continue to help us cultivate engaged and generous donors, who have given our programs an average of nearly \$7 million each year since 2016," said Joshua Wynne, MD, MBA, MPH, dean of the SMHS. "Reducing student debt

has been one of our top priorities recently, and our donors have already helped us decrease the average debt of our graduating medical students by almost one percent per year even as the average medical school debt across the country increased by almost three percent."

A recent Association of American Medical Colleges survey of more than 12,000 graduating medical students showed that graduates rank the social reputation of a given specialty and that specialty's high-income potential as less important than a good work-life balance, a stable future, and an ability to pay off debt.

"Taking the two latter items together—stable, secure future and ability to pay off debt—emphasizes why debt mitigation is so important if we want our students to follow their passion and enter specialties that focus on primary care, especially in rural areas," said Dr. Wynne of the survey. "Lower debt means less emotional stress on students as they make career and practice location decisions. This translates into more students choosing the much-needed primary care specialties like family and general internal medicine and choosing a rural location for clinical practice."

Addressing such debt is exactly what Dodson hopes to do.

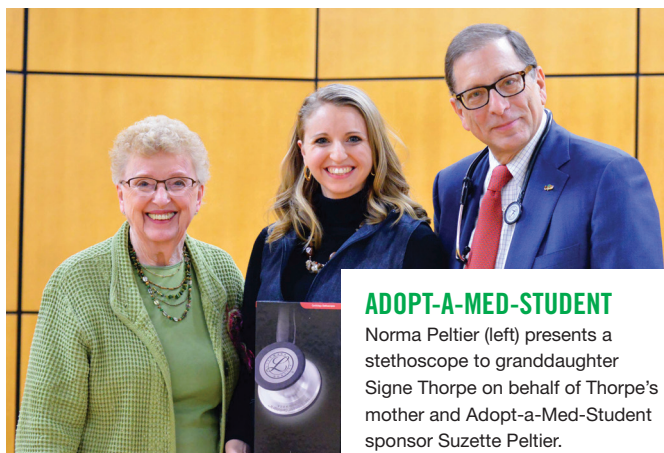
"Jeff is very personable and very driven—two qualities that help to define a successful fundraiser," added Mike Mannausau, vice president of development for the UND Alumni Association & Foundation. "We have been very happy with his work with Arts & Sciences alumni and look forward to seeing what he has in store for the School of Medicine & Health Sciences."

Future donors interested in leaving their own legacy or contributing to existing endowments are encouraged to visit the [UND Alumni Association & Foundation online at UNDalumni.org/smhs](http://UNDalumni.org/smhs).

By Milo Smith

THANK YOU TO OUR THOUGHTFUL DONORS

who recently gave gifts or made pledges.



ADOPT-A-MED-STUDENT

Norma Peltier (left) presents a stethoscope to granddaughter Signe Thorpe on behalf of Thorpe's mother and Adopt-a-Med-Student sponsor Suzette Peltier.

Adopt-a-Med-Student Program

For the fourth consecutive year in the program's eight-year history, there were more Adopt-a-Med-Student donors than students. This year, 54 donors provided funding for 78 stethoscopes, which were presented to first-year medical students during a luncheon Oct. 23, 2018. The students were excited to receive their stethoscopes, the tool that Dr. Wynne pointed out will physically and symbolically connect them to their future patients.

The full list of donors can be found at med.UND.edu/alumni-community-relations/adopt-a-med-student.html.

The website also notes donors who have participated in the program all eight years: Dr. Mark Koponen, Grand Forks, N.D.; Dr. Donald Person, San Antonio, Texas; and Dean Joshua Wynne and Dr. Susan Farkas, Fargo, N.D.

David and Sandra Gregory of Grand Forks, N.D., established the Dave and Sandy Gregory Medical School Scholarship Endowment, which provides scholarships for medical students with preference given to those who grew up in Grand Forks County. Dave Gregory served as director of development for the UND School of Medicine & Health Sciences for two years before retiring in May 2018.

Dr. Dale, BSMed '71, and Carol Moquist of Horseshoe Bay, Texas, established the Dale C. and Carol J. Moquist Endowment, which provides travel funds for medical students attending the annual American Academy of Family Physicians (AAFP) conference. Dr. Moquist earned his medical degree from the University of Texas Southwestern Medical School and completed his family medicine residency training at the University of Minnesota. He practiced for many years in Grand Forks, N.D., before returning to Texas and has most recently served as medical director of the Memorial Hermann Hospital System in Sugar Land, Texas. He has held several leadership roles with the AAFP and received the Presidential Award of Merit from the Texas Academy of Family Physicians.

David, BSPT '71, and Donna Severson of San Jose, Calif., established the David & Donna Severson Physical Therapy Scholarship Endowment, which provides scholarships to second- or third-year physical therapy students with preference to those interested in geriatric rehabilitation and fitness. David owned and practiced at Milpitas Physical Therapy Clinic in Milpitas, Calif., before recently retiring. He continues to provide pro bono services for senior citizens in his community.

Robert and Linda Johnson of Bismarck, N.D., established the Johnson Eylands Family Scholarship Endowment, which provides scholarships for third-year medical students with preference given to those completing a clerkship at Heart of America Medical Center in Rugby, N.D. Robert's father Dr. Christian Johnson and uncle Dr. Olafur Johnson started the Johnson Clinic in Rugby, N.D., in 1933, which became Heart of America Medical Center.

Jeff Dodson

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Jessica Sobolik, '02, '17

Director of Alumni & Community Relations
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North Dakota INBRE holds research symposium at UND School of Medicine & Health Sciences

The North Dakota IDeA Network of Biomedical Research Excellence (INBRE) held its annual Research Symposium at the UND School of Medicine & Health Sciences Oct. 13-14, 2018.

The Oct. 13 morning session was devoted to student research presentations and the afternoon was dedicated to a poster session, networking, and the beginning of several workshops. Dinner was provided along with a research presentation Saturday evening. The Sunday, Oct. 14 session was dedicated to workshops.

The format provided a friendly atmosphere that promoted open discussions and an exchange of ideas on science and training. A new addition this year was the presentation of posters from award winners in the North Dakota Science Fair program. This provided the School with a unique opportunity for recruitment of students into the ND INBRE undergraduate Science Technology,



Engineering, and Mathematics (STEM) programs.

Funded by the National Institutes of Health, ND INBRE focuses on health and the environment studies with research projects that include undergraduate students.

SMHS awards scholarships to Biomedical Sciences graduate students

Atrayee Bhattacharya and Zachary Hoggarth, graduate students pursuing a degree in biomedical sciences and clinical and translational science, respectively, have been given Faculty for Students Scholarships from the UND School of Medicine & Health Sciences (SMHS).

A fifth-year doctoral student, Bhattacharya's research focuses on understanding the molecular mechanisms involved in the epithelial-to-mesenchymal transition (EMT), a cellular process critical to early cell development that has also been implicated in cancer cell migration and drug resistance.

Zachary Hoggarth, St. Cloud, Minn., is a third-year graduate student exploring the mechanisms involved in the development of basal and luminal subsets of muscle-invasive bladder cancer.

"Zach has a very pleasant demeanor, gets along extremely well with all his colleagues, and is a wonderful mentor for undergraduate as well as high school students as he works alongside them at the bench," said Hoggarth's mentor Seema Somji, associate professor in the SMHS Department of Pathology. "His dedication and hard work is paying off early with a manuscript submitted for publication and a second one that is under preparation."

Bhattacharya is also one of seven biomedical sciences students to be awarded the Richard M. Marwin Scholarship Endowment, which was established by Dr. Marwin and his wife Janet in 2015 for the purpose of providing scholarship support to biomedical sciences students.

"Atrayee is a hard-working and conscientious graduate student," noted Bhattacharya's graduate advisor Archana Dhasarathy,

assistant professor in the SMHS Department of Biomedical Sciences.

"She is also a fantastic colleague, very pleasant and cordial to work with. She was instrumental in developing several techniques in the laboratory, and willingly shares her expertise with her colleagues in our laboratory and across campus."



Atrayee Bhattacharya

Richard M. Marwin Scholarship winners:

- Sarmad Al-Marsoum, Baghdad, Iraq
- Atrayee Bhattacharya, Kolkatta, India
- Brett McGregor, Grand Forks, N.D.
- Kyle O'Donnell, Glenco, Minn.
- Meghan Rodriguez, Turlock, Calif.
- Michael Tomlinson, Rolla, N.D.
- Menglan Xian, Changsha, China

Founding chair of the former Department of Microbiology & Immunology from 1948 to 1962, Richard M. Marwin, PhD, was a medical mycologist (someone who studies the medical uses of and problems posed by fungi) who was instrumental in the creation of the School's Department of Biochemistry & Molecular Biology. Both of these departments, along with the departments of Anatomy & Cell Biology and Physiology, Pharmacology & Therapeutics, were consolidated into the Department of Basic Sciences in 2014. This department then became the UND Department of Biomedical Sciences in 2015.

Warne named director of Master of Public Health Program at UND School of Medicine and Health Sciences

Donald K. Warne, MD, MPH, has been named the new director of the Master of Public Health Program at the UND School of Medicine & Health Sciences (SMHS). Warne fills the role previously held by the program's founding Director Raymond Goldsteen, DrPH, who retired in June 2018.



Donald Warne, MD, MPH

"I look forward to building upon the great work that Dr. Goldsteen and his team accomplished in UND's MPH Program," Warne said. "And we have even more opportunity to link undergraduate and graduate public health programs with the medical curriculum. I foresee UND becoming a regional leader in population health education, research, and service."

Warne also serves as the associate dean for diversity, equity, and inclusion and director of the Indians Into Medicine (INMED) Program at the SMHS.

"Dr. Warne had been functioning as the interim director of our public health program, and I'm thrilled that he's agreed to be the new permanent director," noted SMHS Dean Joshua Wynne, MD, MBA, MPH. "Dr. Warne is well-qualified to assume this additional responsibility and will have a full plate of activities at the School."

Among other duties, in his new role Warne will provide strategic vision and operational leadership for the program, creating an environment and community that supports the program's faculty, research agenda, and students. He has responsibility for the leadership and direction of the core curriculum and specialization tracks taught by UND faculty, and will establish, maintain, and foster important relationships

within SMHS and with other academic units within UND, as well as with external schools, colleges, institutes, and centers, including the SMHS clinical campuses.

An enrolled member of the Oglala Lakota Tribe in Pine Ridge, S.D., Warne received his Doctor of Medicine degree from the Stanford University School of Medicine in 1995 and his Master of Public Health degree from Harvard University in 2002. A prolific scholar and grant writer, Warne is also senior policy advisor for the Great Plains Tribal Chairmen's Health Board and former senior fellow of American Indian health policy for the Robert Wood Johnson Foundation Center for Health Policy at the University of New Mexico.

In addition to being a member of the American Public Health Association, American Medical Association, and Association of American Indian Physicians, Warne served in a leadership capacity for the Centers for Disease Control and Prevention, the U.S. Department of Health and Human Services, and the American Cancer Society.

The Master of Public Health Program at UND supports population health improvement in North Dakota, the Northern Plains, and beyond by creating strategies and opportunities to promote health and well-being, prevent disease and injury, and advance health equity. The program offers specializations in Population Health Analytics and Health Management & Policy, and has a 100 percent graduate employment rate in health-related careers.

Correction

The following information was left out of a News Brief item in the Fall 2018 North Dakota Medicine describing Medical Laboratory Science scholarship winners. We regret the omission.

Alexandra Rice, Bismarck, N.D., received the David and Linnea Veeder MLS Scholarship Award for the 2018-19 academic year.

Linnea Veeder was a graduate of the UND Medical Technology program, now called the Medical Laboratory Science program. She and her husband David established the scholarship to give to a deserving student entering UND as a freshman and interested in a career in medical laboratory science.

Geiger awarded four-year, \$2.25 million grant from the National Institutes of Health

Jonathan Geiger, Chester Fritz Distinguished Professor in the Department of Biomedical Sciences at UND's School of Medicine & Health Sciences, is on a multi-university, multiple principal investigator team that received a four-year R01 grant from the National Institutes of Health (NIH) totaling more than \$2.25 million. The



Jonathan Geiger, PhD

grant, entitled "Ketogenic Diet and Adenosine: Epigenetics and Antiepileptogenesis," marks the first time that a faculty member at UND has been the recipient of three simultaneously held R01 grants from the NIH as a principal investigator. NIH R01 grants are considered one of the most prestigious grants for which individuals can apply, and funding for these grants is extremely competitive.

A ketogenic diet is one that promotes the metabolic formation of ketones—organic compounds made via the oxidation of alcohols—by causing the body to use fats, rather than carbohydrates, as its principal energy source. For nearly 100 years, metabolic therapy with a ketogenic diet (KD) has been shown to control seizures in people with epilepsy. More recently, such diets have shown promise in treating pain, increasing longevity, and increasing athletic performance.

The team of investigators includes Detlev Boison, the director of basic and translational research at the Legacy Research Institute in Portland, Ore.; and Susan A. Masino, Vernon Roosa Professor of Applied Science at Trinity College in Hartford, Conn. The three principal investigators have worked closely together and the awarded grant represents a renewal of an NIH R01 grant that the same team held for five years. The

current grant is looking to identify and validate key epigenetic mechanisms engaged by metabolic therapy with a KD and pave the way for novel therapeutic opportunities.

"Receiving this grant is very meaningful in multiple ways," noted Dr. Geiger. "This is a renewal of an NIH R01 grant that Detlev, Susan, and I held for five years, resulting in us publishing over 20 manuscripts, two books, and multiple book chapters. The three of us believe strongly that a metabolic approach might yield new targets for therapeutics against epilepsy. And, we desperately need new targets and therapeutic strategies because one-third of people living with epilepsy are completely resistant to all current anti-epileptic drugs."

The team's hypothesis is that epigenetic changes in DNA methylation (a process by which methyl groups—portions of molecules containing one carbon atom bonded to three hydrogen atoms—are added to DNA) mobilized by a ketogenic diet provide a therapeutic target for disease prevention and treatment. The project's approach is unique in that it initiates disease-modifying treatment *after* disease onset and their approach stresses the rigor and reproducibility of findings across models of epilepsy and between laboratories. The project also is unique in so far as it includes a strategy that aims to restore homeostasis—and thus offer hope for a cure.

Researchers studying epigenetics explore the mechanisms that regulate gene expression and the activation and deactivation of specific genes. Understanding better how the human body can turn genes on and off during growth, aging, and in response to its environment has important implications for the diagnosis and treatment of many diseases including cancer, diabetes, and neurodegenerative diseases such as Alzheimer's, Parkinson's, and epilepsy.

NIH selects Geiger to chair a second vital grant review study section

Also, the National Institutes of Health (NIH) has selected Dr. Geiger to serve as the chair of the HIV Co-Morbidities and Clinical Studies (HCCS) grant review study section for the NIH's Center for Scientific Review (CSR).

This is the second NIH study section that Geiger has chaired. Previously, he was the chair of the NeuroAIDS and Other End-Organ Disease (NAED) study section.

"This is a very special honor for me because few people serve as grant review study section chairs," Geiger said. "The confidence placed in my leadership abilities almost certainly comes from a recognition by my peers and by the NIH that I have sound scientific judgment and that I understand how

essential honesty, passion, and integrity are to the grant review process. This adds a tremendous amount of work to my already busy workload, but interacting with my peers serving on this study section is enlightening, informative, and incredibly educational. Serving on these committees is something that I look forward to and value greatly."

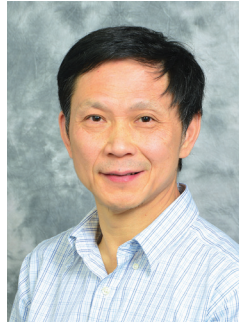
This year the NIH CSR reorganized all of its nine HIV/AIDS study sections into six study sections. The HCCS is a brand new study section that will review NIH grant submissions on organ diseases commonly seen, including: cardiomyopathy, renal disease, liver disease, pulmonary dysfunction, neurocognitive and neurological disorders, metabolic complications, and diabetes.

Multiple faculty at School of Medicine and Health Sciences receive new research awards

Several faculty at the UND School of Medicine & Health Sciences (SMHS) have been awarded research grants recently totaling more than \$2.5 million to be devoted to a variety of years-long research projects at the School.

- **Min Wu, PhD**, professor in the Department of Biomedical Sciences, recently received the first-year installment (\$347,500) of a four-year, \$1.75 million grant from the Department of Health and Human Services and National Institutes of Health (NIH) for a project titled “Long noncoding RNAs interact with miRNAs to Regulate Inflammatory response.”
- **Mikhail Golovko, PhD**, associate professor in the Department of Biomedical Sciences, received the first-year installment (\$208,500) on a two-year \$382,000 grant from the Department of Health and Human Services and NIH for a project titled “Neuronal-specific Fatty Acid Synthesis Activation as Protective Mechanism under Hypoxia.”
- **Lynette Dickson, MS, RD, LRD**, associate director of the UND Center for Rural Health, and **Shawnda Schroeder, PhD**, assistant professor at the Center, have received a one-year, \$200,000 grant from the federal Department of Health and Human Services for a project titled “Rural communities Opioid Response (Planning).”
- **Jacqueline Quisno, MD**, assistant professor at the UND Center for Family Medicine in Bismarck, has received a seven-month, \$74,000 award from the North Dakota Department of Health to complete a project titled “Title X Family Planning Program (FY19).”
- **Alexei Tulin, PhD**, professor in the Department of Biomedical Sciences, received a one-year award from the Institute of Cancer Research in the amount of \$63,176 for a project titled “Histone-Dependent PARP-1 Inhibitors: A Novel Therapeutics Modality for the Treatment of Renal Cell Carcinoma.”

On average, the UND School of Medicine & Health Sciences conducts over \$25 million in research activity annually; most research grants are funded by the NIH, Centers for Disease Control and Prevention, National Science Foundation, and U.S. Department of Health and Human Services, among other organizations. Research specialties at the SMHS include epigenetics, neuroscience, infectious disease, and population health disparities.



Min Wu, PhD



Mikhail Golovko, PhD



Lynette Dickson, MS,
RD, LRD



Shawnda Schroeder,
PhD



Alexei Tulin, PhD



Jacqueline Quisno, MD

Reinhold O. Goehl, MD (BS Med '58), of Minnetonka, Minn., died of cancer September 16, 2018, at age 83. He was born July 7, 1935, and raised in Grand Forks, N.D. Preceded in death by parents, Dr. Goehl was a graduate of UND and the University of Pennsylvania School of Medicine. He completed an internship at Denver General and an obstetrics residency at GBMC/Johns Hopkins in Baltimore. He was a captain in the U.S. Army in Stuttgart, Germany, and eventually practiced at Minneapolis Ob-Gyn Assoc. Ltd. and Group Health in Minnesota. He held memberships in the AMA, Blue Key, and Sigma Chi organizations and was a Fellow of the American College of Obstetrics and Gynecology. In retirement he spent five months per year at his favorite summer home on Lake Bemidji and two weeks every March on Sanibel Island, Fla. He was married to his lifetime best friend Joanie for 62 years. "Riney" was a terrific husband, father, grandfather, and friend. He loved a good gag, photographing his family and nature, travelling (all 50 states and 32 countries), puttering around the house, crafting beer, and buying endless plaid shirts and Angel Soft tissue! He is survived by his wife, Joan (Roller); daughters, Jayne (Gary) Williams, Barb (Gary Timm) Danielson, and Sue Hemme; brother, Robert Goehl; grandchildren, Kelly Williams, Erik (Kyla Flaten) Williams, Ryan (Nikki) Williams, Joe (Tatiana) Danielson, Jack Danielson, Taylor Hemme, Connor Hemme, and many other relatives and friends.

James Balfour Hoyme (BS Med '57), 83, of Carrboro, N.C., died at home on August 17, 2018. He was born February 17, 1935, in Grand Forks, N.D. He was a member of the Grand Forks Central High School Class of 1952. He graduated from the University of North Dakota in 1957 and received his medical degree from Wake Forest University School of Medicine in 1959. Jim completed his psychiatric residency at the University of North Carolina at Chapel Hill in 1965. He served as a Commander in the U.S. Naval Reserve at Camp Lejeune, N.C., from 1967-1969, then taught at the UND School of Medicine from 1970-1973, and was instrumental in starting several outpatient satellite psychiatric facilities in N.D. He then moved on to the faculty of the Medical University of South Carolina at Charleston from 1973 to 1984. In 1984 he became the Medical Director of the Institute of Pennsylvania Hospital until 1996 and remained in private practice in Philadelphia through 2015. He was a member of the American Psychiatric Association and a Senior Examiner for the American Board of Psychiatry and Neurology. Jim was preceded in death by his parents, grandson Jason Mendoza, and his former wife of 40 years, Marjorie Weiss Hoyme (Grigonis). He will be deeply missed by his brother Tom Hoyme and his family; sister Jane Hoyme, MD, and her family; his five children, Jeff Hoyme,

Gail Hoyme, Steve Hoyme, Karen Hoyme, and Carmen Bannon and their spouses; his seven grandchildren, Damon Mendoza, Lluvia Henneberg, Will Hoyme, Matt Hoyme, Katie Hoyme, Phillip Hoyme, and Rachel Hoyme; his eleven great-grandchildren; and his first wife, Kay Cooper (with whom he regained a cherished friendship). He also leaves behind many beloved extended family and friends from throughout his life.

Steven Keith Knutson (BS Med Tech '78), 63, Billings, Mont., died Aug. 24, 2018, at a hospice home in Billings. He was born June 28, 1955, in Kenmare, N.D., to Knute and Vivian (Ones) Knutson. He graduated from Kenmare High School in 1974 and attended the University of North Dakota, graduating with a degree in Medical Technology. He worked for a short time in Gillette, Wyo., before going back to UND to work on a master's degree. He moved to Montana where he worked at the Holy Rosary Hospital in Miles City, Mont., United Blood Services in Billings, and St. Vincent's Hospital in Billings. Steve is survived by his sisters Holly (Mike) Beck and Kristine Brekhus; sister-in-law Debbie Knutson; and six nieces and nephews: Chris (Sarah) Knutson, Amanda Knutson (Erik Moe), Melanie (Tony) LaCorte, Darren Brekhus, Austen (Kim) Beck, and Megan (Dan) Otto. Steve was preceded in death by his brother, Eugene Knutson, his parents, and his paternal and maternal grandparents.

Arthur D. Kracke (BS Med '56) passed away peacefully at Legacy Hopewell Hospice on Oct. 3, 2018. Art, as he liked to be called, was born on the family farm in Edgeley, N.D., to Heinrich "Henry" and Emma (Polzin) Kracke. He was the youngest of nine children, attended a one-room school through eighth grade and graduated as valedictorian from Edgeley High School in 1951. He was the first in his family to attend college, graduating from the University of North Dakota (Phi Beta Kappa honor society) in 1956 after earning B.A. and B.S. degrees from both the School of Medicine and the College of Science, Literature, and Arts. He then transferred to McGill University in Montreal, Canada, where, on a blind date, he met his future wife Ann (Roach) who was a nursing student at Saint Mary's Hospital. Art completed his medical degree in 1958 followed by an internship in Fargo, N.D. In 1959 he began his service as a Lieutenant in the U.S. Navy as the medical officer on the USS Talladega, APA 208. That same year, Art and Ann were married in Montreal. They settled in Long Beach, Calif., where they lived until moving to Portland in 1961 when Art began a two-year pediatric residency at OHSU. He joined Suburban Medical Clinic, practicing pediatrics from 1963 until 1974, at which time he decided to switch specialties and, in 1975, began a residency in radiology at OHSU. From 1978 to 1991 he practiced radiology at the Portland VA Hospital

and worked part-time with the radiology group at Tuality Hospital in Hillsboro until he fully retired in 1999. Art was a long-time member of Resurrection Lutheran Church. An avid reader throughout his life, he also enjoyed gardening, raising chickens, woodworking, baking bread, playing cribbage, and the companionship of pets too numerous to count. Art is survived by Ann, his wife of nearly 59 years, along with their children, Margaret (Steve) Happenny, Janet (Bill) Braman, Peter, and Susan (John) Comes; 12 grandchildren; one great-grandson; as well as his sister, Iva Slag; brothers, Alvin (Wilma) and Hank (Pauline); and many nieces, nephews, and cousins.

Walter Maloney (BS Med '50) passed away on Sept. 1, 2018, in Colorado Springs, Colo. He was born in Cavalier, N.D. He spent his childhood in the logging camps of Stillwater and Campbell River, British Columbia, Canada. He graduated from the University of North Dakota and earned a medical degree at the University of Washington in Seattle. It is there that he met and married his wife, Kay. He volunteered to serve in the military during two wars. Later he and his wife moved to Colorado Springs where they raised their family and Walt practiced medicine for 35 years. During retirement he enjoyed his two passions—spending time with his family and fishing. He is survived by his five daughters and their families.

Thomas Jerome Miller (BS Med '57) passed away on Aug. 26, 2018, at the age of eighty-five. “T.J.” will be lovingly remembered by Helen O’Keefe-Miller, his former wife whom he married in 1957, and the mother of his five children, Tom (Kally), Patti, Dan (Barb), Kathy (Jon), and Julia. He will also be fondly remembered by his nine grandchildren, A.J., Tony, Riley (Jessica), Steven, Brandon (Jacque), T.J., Alex, Maria, and Laura; and five great grandchildren Makayla, Abigail, Mark, John, and Olivia. His siblings Marion, Jean, Val, Rosie, and Mark will also forever remember T.J., who was preceded in death by his beloved companion Nancy Jo McElroy. He is also preceded in death by his parents Andrew and Helen Miller, and by his two brothers Bill and Dan Miller. Raised in Crosby, North Dakota, T.J. was a member of the high school marching band where he played the clarinet. He took this skill to college and played in the Notre Dame Marching Band where he received his undergraduate degree. He attended medical school at the University of North Dakota and Marquette University, completed his residency in Duluth, Minn., and later specialized in ophthalmology at the Mayo Clinic in Rochester, Minn. He began his medical practice in Billings in 1964. He practiced medicine until age seventy-seven and the state awarded him an honorary 50 years of service certificate. T.J. was an avid golfer and won the annual Highland Fling in 1972 with his colleague John Hammerel, MD. He loved the outdoors,

camping, fishing, and hunting throughout Montana. He traveled extensively and enjoyed sailing.

Raymond Vaaler (BS Med '45) peacefully passed away in Scottsdale, Ariz., from a brain aneurism on August 26, 2018. Dr. Vaaler was born in Grand Forks, N.D., on March 20, 1923. His parents were Raymond Alfred Vaaler and Alice Stephanie (Engbretson) Vaaler. Raymond’s 95 years were well-lived and well-spent. While studying at the University North Dakota, Ray was drafted by the U.S. Army in 1943. He entered the Army Specialized Training Program and continued studying medicine until the end of WWII. After returning to Grand Forks, Ray received his Bachelor of Science in Medicine in 1945. He earned his Doctor of Medicine from the University of Illinois in 1947. Ray completed his medical training at Cook County Hospital in Chicago, Duke University, and the University of Kansas. Feeling an obligation to his country Ray enlisted in the U.S. Army during the Korean War. He was a Captain and battalion surgeon stationed near the front from 1950 until the war ended in 1952. After leaving the army and practicing medicine in North Dakota, Ray moved to Arizona with his family in 1962. Although Ray had been a general surgeon, he dedicated the majority of his professional life to the practice of obstetrics and gynecology in Phoenix for 30 years, retiring in 1992. Ray was one of the first bilingual obstetricians in the valley, providing care to Spanish-speaking families. A supporter of Planned Parenthood, he was a weekly volunteer in the 1970s at the clinic in Phoenix. Ray was among the earliest surgeons to complete training in Gynecological Laser Surgery in 1985 at Good Samaritan Hospital in Phoenix. Raymond married his college sweetheart Ann Irene Vaaler from Esmond, N.D., in 1946 in Chicago. His son James was born in Dubuque, Iowa, in 1949 and daughter Barbara in Kansas City, Kan., in 1951. Raymond was pre-deceased in 2014 by his bride Ann and is survived by his son James Raymond Vaaler (Lynn) of Phoenix and his daughter Barbara Vaaler Buchanan (John) of Payson. Raymond and Ann had four loving grandchildren: Lisa Vaaler, Christina Vaaler (Stephen), Bryn Buchanan, and John Buchanan. Christina and Stephen gave Ray and Ann three darling great-grandchildren: Alex, Katarina, and Liam.



JOGGIN' WITH JOSH

On Sept. 6, 2018, over 100 people from the greater Grand Forks community participated in the ninth annual Joggin with Josh 5K or 10K walk/run/jog held on a route circling the SMHS building in Grand Forks.



RECOGNIZING A LEADER

At the annual "Wake Up to UND" event on Sept. 26, 2018, UND President Mark Kennedy presented Altru Health System CEO Dave Molmen (right) with a UND President's Medal. The award has only been bestowed 30 times since 1974, spanning five university presidents.



AMERICAN INDIAN HEALTH

Deputy Director of UND's Center for Rural Health, Brad Gibbens (right), chats with Rodney Haring, PhD, MSW, assistant professor of oncology in the Department of Cancer Health Disparities Research at Roswell Park Comprehensive Cancer Center in Buffalo, N.Y. Haring spoke at the 16th Annual American Indian Health Research Conference that took place at the SMHS on October 20, 2018.



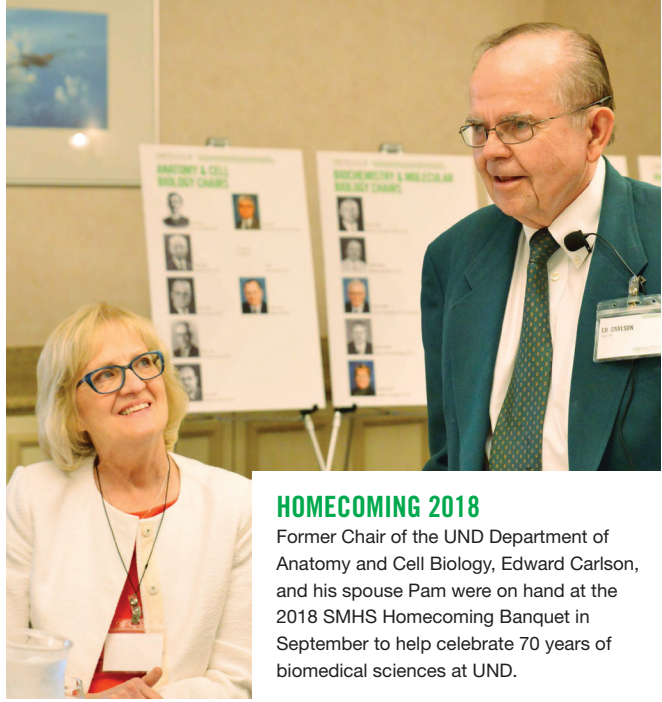
HOMECOMING 2018

Members of the SMHS Class of 1998 at the 2018 SMHS Homecoming Banquet. Left to right are: SMHS Dean Joshua Wynne, Bryan Sleigh, MD, Candice Nelson, MD, Sarah McCullough, MD, Paul Bilstad, MD, James Dungan, MD, Dawn Eickman, MPT, Jeffrey Sather, MD, Mathew Stayman, MD, and Director of the SMHS Office of Alumni & Community Relations Jessica Sobolik.



FACULTY LECTURE SERIES

Dr. Wynne discusses his experiences in India studying rheumatic fever and outcomes for heart surgery at the first installment of the 2018 UND Faculty Lecture Series in September 2018.



HOMECOMING 2018

Former Chair of the UND Department of Anatomy and Cell Biology, Edward Carlson, and his spouse Pam were on hand at the 2018 SMHS Homecoming Banquet in September to help celebrate 70 years of biomedical sciences at UND.



EVERYONE LOVES A PARADE

Students from the SMHS medicine, INMED, and health sciences programs walk in the joint Potato Bowl/Homecoming parade in Sept. 2018.



PRIMARY CARE WEEK

SMHS students and faculty discussed (rural) primary care with providers during Primary Care Week 2018 at the School.

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ADDRESS SERVICE REQUESTED

SAVE THE DATE

Alumni receptions in conjunction with professional conferences



PHYSICAL THERAPY

Jan. 24, 2019 - Washington, DC

UNDalumni.org/pt2019



OCCUPATIONAL THERAPY

April 5, 2019* - New Orleans

Photo by Todd Coleman.



PHYSICIAN ASSISTANTS

May 2, 2019 - Fargo

* tentative